

D.N. 0190.02
U.S. Express Mailing Number
EU541138197US

Table 1. Extrusion melt temperatures of whey proteins.

Product	Melt Temperature (°C)	Pre-Extrusion (%)	Post-Extrusion (%)
WPC80	70 ± 2	40.9	59.9
WLAC	75 ± 1	68.7	94.4
WPI	74 ± 1	28.0	94.8

WPC80: Whey Protein Concentrate, 80% protein. WLAC: Whey Lactalbumin. WPI: Whey

Protein Isolate: Number reported is mean of three samples.

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Table 2. Properties of whey protein isolate (WPI) as function of extrusion temperature.

Extrusion Temp. (°C)*	pH	Protein** (%)	Insoluble (%)	Digestibility (%)
35	6.7	90.7	28.4	89.6
50	6.8	90.9	33.3	88.2
75	6.9	91.7	77.7	85.7
100	7.0	91.4	87.2	84.5
PSD	0.2	0.7	1.2	0.6

WPI: Whey protein isolates. *: Preset barrel temperature of zones 6, 7, 8, 9. PSD: Pooled Standard Deviation. **: % Protein after drying. Properties of non extruded WPI: pH 6.8, Protein 88.9%, Insoluble (Denatured) 28.0%, and Digestibility 87.7%.

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Table 3. Physical properties of whey protein isolate (WPI) as function of extrusion temperature.

Extrusion Temp. (°C)*	Moisture (%)	Gel strength (N)	Foam volume (%)	Foam stability
35	42.5	114.9	298.1	29.8
50	40.9	145.3	301.9	30.2
75	42.6	2.8	173.3	17.3
100	38.9	#	77.1	7.7
PSD	0.7	1.9	1.2	1.1

WPI: Whey protein isolates. *: Preset barrel temperature of zones 6, 7, 8, 9. PSD: Pooled Standard Deviation. Properties of non-extruded WPI: Moisture 1.94%, Gel Strength 52.3 (N), Foam volume 288%, and Foam stability 28.7%.

#: Value Not Reported.